Rough Draft the Outline for the June Interim Report

A: Executive summary (Green, Schechter)

B: Introduction/Retrospective (Gehrels, Bennett C., Brown, Wright)

What this report is

A mission concept that addresses all of the science issues identified by NWNH

Description of current landscape for WFIRST

Science Objectives

Determine the expansion history of the Universe and its growth of structure so as to test explanations of its acceleration such as Dark Energy and modifications to Einstein's gravity.

Complete the census of planets like those in the Solar system from Earth like planets in the habitable zone to free floating planets.

Serendipitously survey the NIR sky at a redshift that detects the bulk of star formation history of the Universe

Observing Program elements – HLS, Microlensing, SNe, Galactic surveys/GO

C: Science

Describe science areas

Dark Energy – 1 page (Rhodes, Lauer, Wang)

Exoplanets – 1 page (Bennett D., Tanner)

Surveys and GO program – 1 page (Stern, Nichol)

Science requirements - 3 DE techniques, Microlensing

(Hirata, Perlmutter, Gaudi)

Determine eta Earth at the 5 sigma level assuming it is TBD or greater

Determine eta Mars at the 5 sigma level if it is 1.

Determine eta 30AU at the 5 sigma level if it is 1.

For WL, measure 30 (TBD) galaxies/arcmin^2 for 2,300 deg^2/yr (TBD)

Perform an imaging survey to a depth of 25 (TBD) mag (AB).

For BAO, measure 3 (TBD) galaxies/arcmin^2 over the redshift range of 1.1 to 2 for 10,000 deg^2/yr (TBD)

Perform a spectroscopic survey to a sensitivity of 1.6 x10^{-16} erg/cm^2-s (TBD).

Measure 1000 (TBD) SNe in the redshift range X to Y. (TBD)

Requirements flow down page – Project Office (Jackson)

D: FoMs

Description of FoMs (1/2 page per group)

Microlensing – Gaudi, Sumi

DE – Wang, Bean, Baltay, Schechter

NIR survey – Conselice, Roellig, Donahue

FoM evaluation of DRM science return

(FoM evaluation of the DRM Sky Catalogs)

E: DRM Design (Project Office)-5 pages

Payload

Optics

Instruments

Spacecraft

Ground System

Mission Architecture

Calibration System-Is this just relative system from RFI?

Identify any deltas from WFIRST/JDEM Omega as indicated in NWNH

Provide rationale for any changes

Off Axis telescope & aperture

Number of optical channels

Focal Plane

Pixel Scale

Data Volume

Power

Mass

Technology Readiness/Risk?

F: Ops Concepts (Project Office)-2 pages

High level observations operations descriptions

(Using assumed mission time allocations provided by NWNH, SDT Chairs)

Tie back to Sky Catalog Requirements

For each observing method:

Sky coverage

Tiling

Gap filling

Depth of observations

Red shift

Observing efficiency

G: DRM Science Performance (Kruk)-1 page

H: Project Office DRM Schedule & Cost-2 page

Cost and schedule

I: Conclusions-1/2 page

Plan Ahead is design cycle and optimizations

Notional Schedule

J: APPENDIX

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